Reply to Letter: "Allogeneic Blood Transfusion and Colorectal Cancer Outcome After Surgery"

Keeler, Barrie D ; Brookes, Matthew J ; Spahn, Donat R ; Acheson, Austin G

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Blood Transfusion and Colorectal Cancer Outcome

To the Editor:

Acheson et al conclude that patients who undergo colorectal surgery for cancer have an increased risk of overall mortality and cancer mortality if they receive allogenic red blood cell transfusions.[1] But do they have the cart before the horse? Their study, a systematic review of the literature, reviewed 20,795 patients with colorectal cancer of which 59% were transfused in the perioperative period. These patients were compared with the 41% of nontransfused patients. Although the authors attempted to adjust for various risk factors that might lead to transfusion, such matching is bound to be problematic. For example, it appears that only 1 of the 55 included studies adjusted for blood loss, and only 1 study adjusted for the type of surgeon. Although the authors point out that allogenic blood transfusions may be deleterious, it is important to consider that the factors that predispose patients to transfusion are the real cause of the adverse outcome, rather than the use of blood. Neovascularization seen in later stage tumors may affect total blood loss during surgery. Intraoperative complications and surgeon experience may also contribute to blood loss and the decision to transfuse. Any of these factors will contribute to increased risk of mortality and long-term survival.

Although a randomized controlled trial based on use or nonuse of transfusion would be unethical, a substitute trial comparing autologous with allogenic transfusion in patients with colorectal cancer has been performed and revealed no difference in outcome in the 2 groups after 4 years, suggesting that blood loss rather than transfusion is the major cause leading to increased mortality.[2] In a recent report, Morner et al[3] also suggest that blood loss is the driving force—not transfusion.

In summary, all surgeons understand the importance of minimizing blood loss during colorectal surgery, but we believe that if transfusion becomes necessary, it will not jeopardize the patient's life.

Christina Jenkins, MD
Albert B. Lowenfels MD
Department of Surgery
Westchester Medical Center
New York Medical College
Valhalla, NY
Lowenfel@nymc.edu

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Reply:

We were interested to read the recent comments from Albert Lowenfels et al in response to the article "Effects of Allogeneic Red Blood Cell Transfusions on Clinical Outcomes in Patients Undergoing Colorectal Cancer Surgery: A Systematic Review and Meta-analysis."[1] The original article did not advocate withholding allogeneic blood transfusions (ABTs) when clinically required but illustrated that the clinician must be mindful of the potential repercussions that such transfusions may have.

Lowenfels et al make the comment that increased ABT use may be indicative of higher blood losses, which may be a consequence of more advanced tumor, more technically challenging surgery, or lack of surgical experience/expertise. Although it is true that such factors were not matched in all the literature reviewed in the original article, we would argue that with the advent of colorectal screening programs, minimal access approaches, and increased trainee supervision, such factors would account for exceptions in ABT, rather than the norm.

We feel that the majority of perioperative ABT use is a consequence of preexisting, preoperative anemia, which in itself results in an increase in perioperative mortality and morbidity,[2] rather than intraoperative blood loss. It is suggested that 39% of patients with a diagnosis of colorectal cancer will have anemia.[3] Such a figure mirrors the 41% ABT rate identified in our original article, which is far higher than the number of operative cases that would be expected to have significant blood loss to require ABT, irrespective of causality.

Lowenfels et al also propose that the study by Busch et al[4] lends weight to the argument that blood loss is the major factor leading to increased mortality, where equal mortality rates were seen after autologous blood transfusion and ABT use in patients who underwent colorectal cancer surgery. Although this may be contributory, we believe that there still remains insufficient clinical evidence to state that autologous blood transfusion does not merely produce the same adverse clinical outcomes as ABT although the risks of infection transmission are likely to be reduced by this strategy.[5]

Mortality after surgery for colorectal malignancy is clearly multifactorial. We advocate measures to treat preoperative anemia and limit perioperative losses, and when all else fails, use restrictive ABT practices, aware that this is a risk-benefit decision.[6]

Barrie D. Keeler, FRCS
Division of Gastrointestinal Surgery
Biomedical Research Unit
Nottingham Digestive Disease Centre
Nottingham University Hospitals NHS Trust
and University of Nottingham
Nottingham, United Kingdom
Matthew J. Brookes, PhD
Royal Wolverhampton NHS Trust
Wolverhampton, United Kingdom
Donat R. Spahn, MD
Institute of Anesthesiology
University Hospital and University of Zurich
Zurich, Switzerland
austin.acheson@nottingham.ac.uk
Austin G. Acheson, MD
Division of Gastrointestinal Surgery
Biomedical Research Unit
Nottingham Digestive Disease Centre
Nottingham University Hospitals NHS Trust
and University of Nottingham
Nottingham, United Kingdom

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